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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,736	05/27/2005	Louis Dubertret	P08652US00/BAS	4693
881 7590 12/24/2009 STITES & HARBISON PLLC 1199 NORTH FAIRFAX STREET SUITE 900 ALEXANDRIA, VA 22314			EXAMINER KARPINSKI, LUKE E	
			ART UNIT 1616	PAPER NUMBER
			MAIL DATE 12/24/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/536,736

Applicant(s)

DUBERTRET ET AL.

Examiner

LUKE E. KARPINSKI

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/200)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Second Action Non-Final

The instant action is non-final due to applicant's perfection of priority thereby anti-dating the Anselmann patent and overcoming the previous rejection.

Receipt of amendments, argument, remarks, and a certified copy of the foreign priority application is acknowledged.

Claims

Claims 1-24 are canceled.

Claim 25 is amended.

Claims 25-47 are pending and under consideration in this action.

Rejections

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Response to Arguments

Applicant's arguments with respect to claims 25-47 have been considered but are moot in view of the new ground(s) of rejection.

New Rejections

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 25-32, 35-36, 38-40, and 45-47 are rejected under 35 U.S.C. 103(a)
as being unpatentable over USPN 5,543,436 to Hocquaux et al. in view of USPN
6,572,784 to Coombs et al.

Applicant Claims

Applicant claims a method of using quantum dots comprising introducing said quantum dots into cosmetic compositions, wherein said dots have a core/shell structure and a mean particle size of 1-50nm.

Applicant further claims said composition as an emulsion, said dots in the different phases of said emulsion, different semiconductors for said core and shell, a plurality of shell layers, said dots coated with groups, and specific cosmetic compositions.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Hocquaux et al. teach cosmetic compositions comprising O/W emulsions (col. 5, lines 52-59) as pertaining to claims 25-31, nail varnishes and creams (col. 5, lines 25-48), as pertaining to claims 45-47, and said compositions comprising nanopigments between 1-50nm, which reads on quantum dots (col. 6, lines 34-45), as pertaining to claim 25.

***Ascertainment of the Difference between Scope the Prior Art and the Claims
(MPEP §2141.012)***

Hocquaux et al. do not teach quantum dots as said pigments as claimed in claim 25. This deficiency in Hocquaux et al. is cured by Coombs et al. Coombs et al. teach quantum dots as pigments used in cosmetics (col. 1, lines 14-17 and col. 11, line 14 to col. 12, line 44).

Further, Hocquaux et al. do not teach which phase said quantum dots may be found in, what semiconductors make up said quantum dots, or how many monolayers said shell may comprise. These deficiencies are cured by Coombs et al. Coombs et al. teach that said dots may comprise CdSe as a core and ZnS and CdS as a shell (col. 11, lines 14-43), as pertaining to claims 32, 35, 36, and 38-40.

Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)

Regarding claim 25, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the cosmetic compositions of Hocquaux et al. with quantum dots as taught by Coombs et al. in order to produce the invention of instant claim 25.

One of ordinary skill in the art would have been motivated to do this because Hocquaux et al. teach cosmetic compositions comprising nanopigments within the claimed quantum dots size range, Coombs et al. teach that quantum dots are known to be pigments used in cosmetics and a size within the claimed range. Therefore it would have been obvious to utilize the quantum dots of Coombs et al. as nanopigments in the

compositions of Hocquaux et al. in order to utilize a known pigment material that is known to be incorporated in cosmetics.

Regarding claims 26-29 and 45-47, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the compositions of Hocquaux et al. as an O/W emulsion, a cream, a nail varnish, or a lacquer in order to produce the invention of instant claims 26-29 and 45-47.

One of ordinary skill in the art would have been motivated to do this because Hocquaux et al. teach compositions such as creams and nail varnishes in O/W emulsion form, nail varnish reads on lacquer. Therefore it would have been obvious to produce any of the compositions of Hocquaux et al, with nanopigments in order to produce known compositions.

Regarding claims 30-32, 35, 36, and 38-40, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the compositions of Hocquaux et al. with quantum dots having all of the claimed limitations as taught by Coombs et al. in order to produce the invention of instant claims 30-32, 35, 36, and 38-40.

One of ordinary skill in the art would have been motivated to do this because Coombs et al. teach each and every limitation concerning the quantum dots and that quantum dots are known pigments and used in cosmetics, and Hocquaux et al. teach cosmetics compositions comprising nanopigments. Therefore it would have been obvious to utilize any of the quantum dots of Coombs et al. in the cosmetic

compositions of Hocquaux et al. in order to produce cosmetics with known quantum dots, having the known features claimed and described by Coombs et al.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

2. Claims 33, 34, 37, and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,543,436 to Hocquaux et al. in view of USPN 6,572,784 to Coombs et al. and USPN 6,319,426 to Bawendi et al.

Applicant Claims

Applicant claims are delineated above and incorporated herein.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Hocquaux et al. are delineated above and incorporated herein.

Ascertainment of the Difference between Scope the Prior Art and the Claims (MPEP §2141.012)

Further, neither Hocquaux et al. nor Coombs et al. teach the claimed limitations of said quantum dots as claimed in claims 33, 34, 37, and 41-44. These deficiencies are cured by Bawendi et al. Bawendi et al. teach semiconductors including ZnS, GaAs, Ge, Si, CdS as a core, and CdSe as a shell, and mixtures thereof, (col. 11, line 45 to col. 12 line 50 and claims 29-30), as pertaining to claims 33 and 34, up to 8 shell monolayers (col 12, lines 49 and 50), as pertaining to claim 37, said quantum dots coated with a bilayer, forming a micelle complex, wherein said micelle has a hydrophobic core and hydrophilic outer layer, pluralities of hydrophobic and hydrophilic groups, and chains of greater than 8 carbon atoms (col. 17, lines 36-56 and figures 5a and 5b), as pertaining to claim 41, that said hydrophilic group may be a polysaccharide, including dextran, or PEG (col. 8, line 20 to col. 10, line 16, col. 14, lines 10-15 and col. 17, line 25), as pertaining to claims 42-44.

Finding of Prima Facie Obviousness Rational and Motivation

(MPEP §2142-2143)

Regarding claims 33, 34, 37, and 41-44, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the compositions of Hocquaux et al. with quantum dots having all of the claimed limitations as taught by Bawendi et al. in order to produce the invention of instant claims 33, 34, 37, and 41-44.

One of ordinary skill in the art would have been motivated to do this because Bawendi et al. teach each and every limitation concerning the quantum dots, Coombs et al. teach that quantum dots are known pigments and used in cosmetics, and Hocquaux et al. teach cosmetics compositions comprising nanopigments. Therefore it would have been obvious to utilize any of the quantum dots of Bawendi et al. in the cosmetic compositions of Hocquaux et al. in order to produce cosmetics with known quantum dots, having the known features claimed and described by Bawendi et al.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

3. Claims 25-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,543,436 to Hocquaux et al. in view of US Patent Publication 2003/0116747 to Lem et al. and USPN 6,319,426 to Bawendi et al.

Applicant Claims

Applicant claims are delineated above and incorporated herein.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Hocquaux et al. are delineated above and incorporated herein.

***Ascertainment of the Difference between Scope the Prior Art and the Claims
(MPEP §2141.012)***

Hocquaux et al. do not teach quantum dots as said pigments as claimed in claim 25. This deficiency in Hocquaux et al. is cured by Lem et al. Lem et al. teach quantum dots as pigments (abstract and [69]).

Further, neither Hocquaux et al. nor Lem et al. teach all of the claimed limitations of said quantum dots as claimed in claims 25-47. These deficiencies are cured by Bawendi et al. Bawendi et al. teach uncoated dots are soluble in organic solvents and that said dots may be coated in order to be soluble in water (fig 5b), as pertaining to claims 30 and 31, semiconductors including ZnS, GaAs, Ge, Si, CdS as a core, and CdSe as a shell, and mixtures thereof, (col. 11, line 45 to col. 12 line 50 and claims 29-30), as pertaining to claims 32-36, 38 and 39, up to 8 shell monolayers (col 12, lines 49 and 50), as pertaining to claims 37 and 40, said quantum dots coated with a bilayer, forming a micelle complex, wherein said micelle has a hydrophobic core and hydrophilic outer layer, pluralities of hydrophobic and hydrophilic groups, and chains of greater than 8 carbon atoms (col. 17, lines 36-56 and figures 5a and 5b), as pertaining to claim 41, that said hydrophilic group may be a polysaccharide, including dextran, or PEG (col. 8, line 20 to col. 10, line 16, col. 14, lines 10-15 and col. 17, line 25), as pertaining to claims 42-44.

Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)

Regarding claim 25, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the cosmetic compositions of Hocquaux et al. with quantum dots as taught by Lem et al. and Bawendi et al. in order to produce the invention of instant claim 25.

One of ordinary skill in the art would have been motivated to do this because Hocquaux et al. teach cosmetic compositions comprising nanopigments within the claimed quantum dots size range, Lem et al. teach that quantum dots are known pigments, and Bawendi et al. teach the specific limitations of said quantum dots. Therefore it would have been obvious to utilize the quantum dots of Bawendi et al. as nanopigments in the compositions of Hocquaux et al. in order to utilize a known pigment material.

Regarding claims 26-29 and 45-47, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the compositions of Hocquaux et al. as an O/W emulsion, a cream, a nail varnish, or a lacquer in order to produce the invention of instant claims 26-29 and 45-47.

One of ordinary skill in the art would have been motivated to do this because Hocquaux et al. teach compositions such as creams and nail varnishes in O/W emulsion form, nail varnish reads on lacquer. Therefore it would have been obvious to produce any of the compositions of Hocquaux et al, with nanopigments in order to produce known compositions.

Regarding claims 30-44, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to produce the compositions of Hocquaux et al. with quantum dots having all of the claimed limitations as taught by Bawendi et al. in order to produce the invention of instant claims 30-44.

One of ordinary skill in the art would have been motivated to do this because Bawendi et al. teach each and every limitation concerning the quantum dots, Lem et al. teach that quantum dots are known pigments, and Hocquaux et al. teach cosmetics compositions comprising nanopigments. Therefore it would have been obvious to utilize any of the quantum dots of Bawendi et al. in the cosmetic compositions of Hocquaux et al. in order to produce cosmetics with known quantum dots, having the known features claimed and described by Bawendi et al.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

Claims 25-47 are rejected.

No claims are allowed.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUKE E. KARPINSKI whose telephone number is (571)270-3501. The examiner can normally be reached on Monday Friday 9-5 est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEK

/Mina Haghighatian/
Primary Examiner, Art Unit 1616